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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.         | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------------|------------------|
| 09/818,138   | 03/27/2001  | Atsuhiko Yoneda      | 8373.234US01                | 2609             |
| 23552  | 7590        | 05/09/2002           |                             |                  |
| MERCHANT & GOULD PC<br>P.O. BOX 2903<br>MINNEAPOLIS, MN 55402-0903 |             |                      | EXAMINER<br>CUEVAS, PEDRO J |                  |
|  |             |                      | ART UNIT<br>2834            | PAPER NUMBER     |
| DATE MAILED: 05/09/2002  |             |                      |                             |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |
|------------------------------|------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                              | 09/818,138             | YONEDA ET AL.       |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |
|                              | Pedro J. Cuevas        | 2834                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 27 March 2001.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 March 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                          | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                 | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,244,374 to Tomita et al.

Tomita et al. clearly teaches the construction of an electrically operated power steering device including an electric motor (50) comprising:

an annular outer stator (52) having circumferentially arranged stator windings (52b) of nine or a multiple of nine poles (52a); and

an inner rotor (51) positioned within the outer stator and having circumferentially arranged permanent magnets (51b) of eight poles;

the stator windings being connected such that they can be driven by electric power of three phases.

5. With regards to claim 5, Tomita et al. disclose the eight poles of the permanent magnets are magnetized radially so that N and S poles are alternately arranged circumferentially.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 6,244,374 to Tomita et al. in view of U.S. Patent No. 6,351,050 to Coles.

Tomita et al. disclose the construction of an electrically operated power steering device as described above.

However, it fails to disclose an electric power steering apparatus wherein:

three or a multiple of three poles of the stator windings being connected in series to provide three phases; and

the three phases comprises those three or a multiple of three poles of the stator windings which are not positioned adjacent to each other, connected in series.

Coles teach the construction of an electrical power assisted steering system having:

three or a multiple of three poles of the stator windings being connected in series to provide three phases (Figure 3); and

the three phases comprises those three or a multiple of three poles of the stator windings which are not positioned adjacent to each other (Windings A, B and C of Figure 2), connected in series (Figure 3); for the purpose of providing an electrical power assisted steering system having an electric motor of the brushless type with a low braking torque.

It would have been obvious to one skilled in the art at the time the invention was made to use the electrical power assisted steering system disclosed by Coles on the electric power steering apparatus disclosed by Tomita et al. for the purpose of providing an electrical power assisted steering system having an electric motor of the brushless type with a low braking torque.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,244,374 to Tomita et al. in view of U.S. Patent No. 6,351,050 to Coles as applied to claims 2 and 3 above, and further in view of U.S. Patent No. 6,049,153 to Nishiyama et al.

Tomita et al. in view of Coles disclose the construction of an electrically operated power steering device as described above.

However, it fails to disclose an electric power steering apparatus wherein each of the three phases comprises those three or a multiple of three poles of the stator windings, which are positioned adjacent to each other, connected in series.

Nishiyama et al. teach the construction of a motor wherein each of the three phases comprises those three or a multiple of three poles of the stator windings, which are positioned adjacent to each other, connected in series for the purpose of providing a rotor that is rotated and driven by utilizing reluctance torque in addition to magnetic torque and the size of the coil end is reduced.

It would have been obvious to one skilled in the art at the time the invention was made to use the motor disclosed by Nishiyama et al. on the electrically operated power steering device disclosed by Tomita et al. in view of Coles for the purpose of providing a rotor that is rotated and driven by utilizing reluctance torque in addition to magnetic torque and the size of the coil end is reduced.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R. Ramírez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pedro J. Cuevas  
May 3, 2002

  
KARL TAMAI  
PRIMARY EXAMINER